

# Answers to MIDTERM REVIEW

(Reverse)

1)  $-2, 0, \sqrt{3}, \frac{3}{2}, 6$

2)  $-6$

3)  $-12$

4)  $-27 - 12r$

5)  $36$

6)  $\{-5\}$


7)  $\{0\}$

8)  $x = 14 - \frac{2}{3}y$


9)  $\frac{4}{3}x$

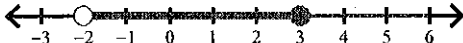
10)  $v = \frac{d - d_1}{t}$

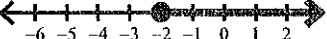
11)  $60$

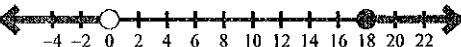
12)  $b \geq -5$  : 

13)  $11/05/11$

14)  $r \leq 1$  : 

15)  $-2 < x \leq 3$  : 

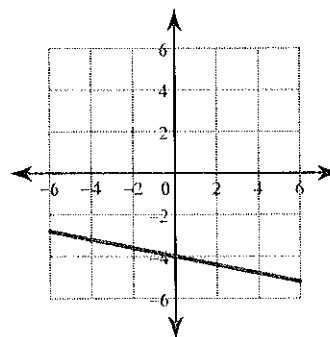
16)  $b \geq -2$  : 

17)  $n \geq 18$  or  $n < 0$  : 

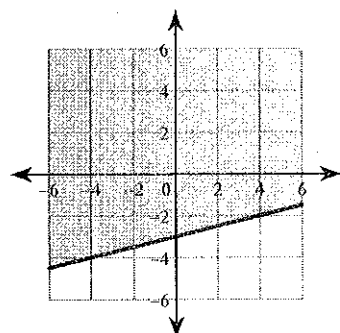
18)  $\left\{\frac{5}{3}, -\frac{11}{3}\right\}$

19)  $16 + 80v$

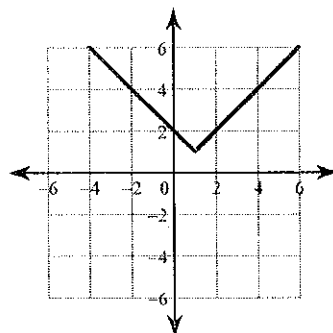
20)



21)



22)



23) The dot next to the choice indicates that it is the answer.

Justify ALL answers.

- 23) The Recording Industry Association of America says digital music sales have been growing, while sales in physical music items (CDs, cassettes, and LPs) have been declining. The table below shows the number of CDs shipped per year from 2000 to 2008.

Year	CDs shipped (millions)
2000	942.5
2001	881.9
2002	803.3
2003	746.0
2004	767.0
2005	705.4
2006	619.7
2007	511.1
2008	384.7

- a) Using either a graphing calculator or the graph below, find the equation of the regression line. DO NOT share calculators.

$$y = -62.5t + 956.7$$

$$r^2 = -0.968$$

$$r^2 = 0.937$$

- b) How well does your regression line model the data? What kind of correlation is it? Is it weak or strong?

⊖, Strong  $r = -0.968$

- c) What is the slope of the line? What does the slope say about CD sales?

-62.5  $\frac{\text{CDs}}{\text{yr}}$ , the # of CD's sold decreased each year

- d) Based on your regression line, predict the number CDs that will be shipped in 2011.

$$y = -62.5(11) + 956.7$$

$$y = 269.3 \text{ million CDs}$$

- d) Based on your regression line, predict when 1 billion (1000 million) CDs were shipped.

$$y = -62.5t + 956.7$$

$$1000 = -62.5t + 956.7$$

$$43.3 = -62.5t$$

$$-0.69 \text{ yrs} = t$$

$t = -0.69 \text{ yrs ago} \rightarrow \text{April 1999}$   
 $= 8 \text{ months ago}$